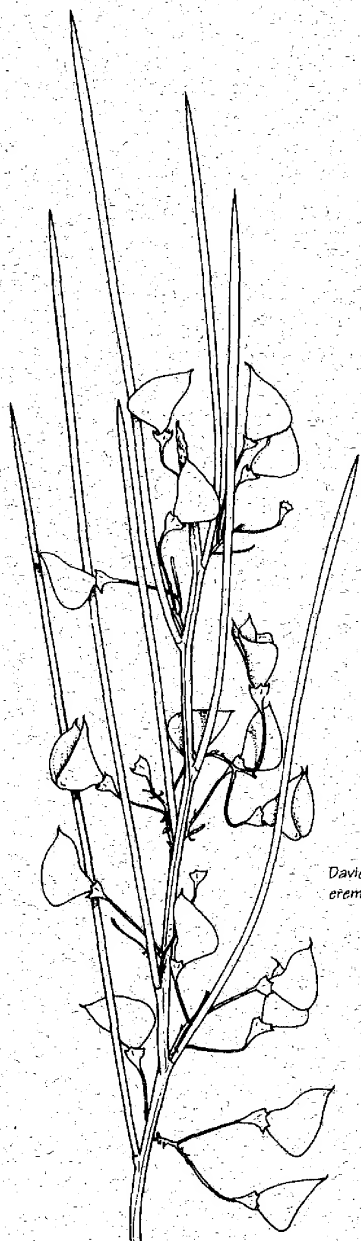


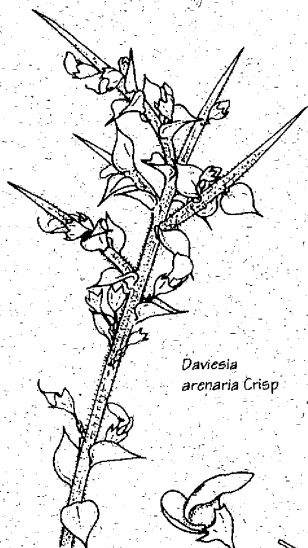


Australian Systematic Botany Society NEWSLETTER

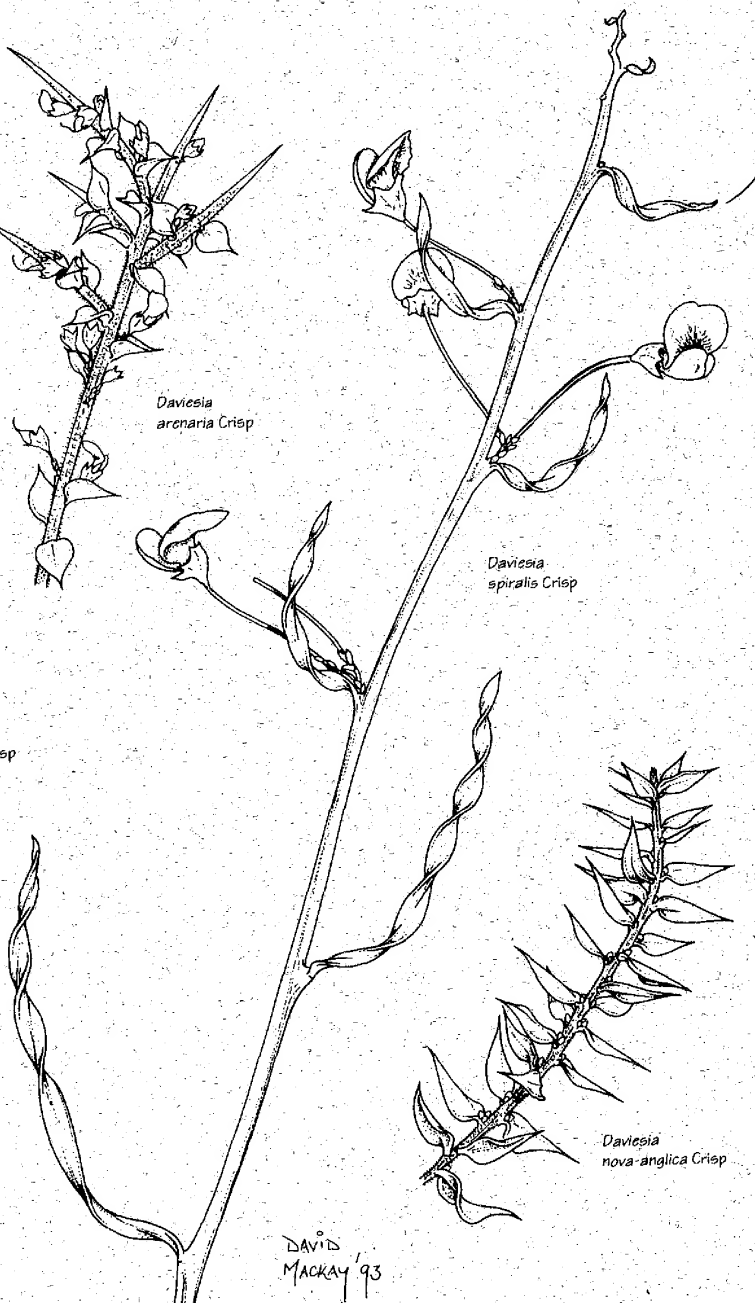
No. 84 SEPTEMBER 1995



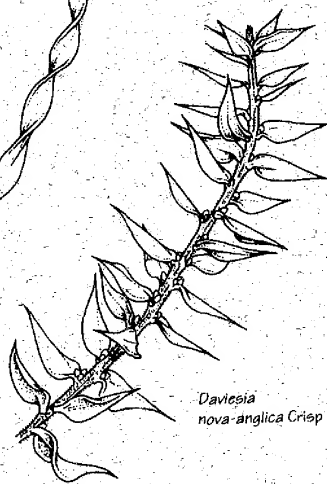
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DAVID
MACKAY '93

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FROM THE PRESIDENT

FAREWELL FROM THE PRESIDENT

I have now been president of ASBS for three terms and, under our constitution, must now step down. I have found the experience interesting, rewarding and at times frustrating - because I have not achieved all I set out to do - but I can only blame myself for that. During the last 3 1/2 years the society has quietly pursued its usual activities, such as this excellent Newsletter and successful symposia in Hobart, Perth and Kuranda. Many thanks go to the organising committees led respectively by Bob Hill, Jenny Chappill and Steve Hopper, and John Clarkson. It is very pleasing to see the papers from all these either published or well in train. In addition we are running a cladistics workshop in Canberra this month. I surely hope that one will be successful! We have helped inaugurate the National Biodiversity Council, and the signs already are that it will be a huge success. We have set in place a scheme for helping students present papers at our meetings, and this has increased the numbers attending. We relieved the Treasurer of managing the membership database, and this was taken over by the Public Officer, Andrew Lyne, who is now running it nicely. Also, we have installed a new constitution, but I do not see that as an achievement - the new constitution is infinitely more complex and inflexible than the old one, and we only adopted it because government inflicted it on us. One benefit perhaps is that we must now meet every year. During my presidency the society celebrated its 20th birthday, an important if low key benchmark. I am confident that ASBS will still be thriving 20 years hence. As for my unfinished business mentioned above, I would have liked to pursue further the 'AIBS' proposal for coordinated meetings of biological societies. Also, I hoped that we would have set in place by

now a small grants scheme from the earnings of the Hansjoerg Eichler Research Fund. However, I expect to have more time to work on these projects now that I am relieved of presidential duties! I hope that I leave the society in a healthy state but that is for you to judge. I thank for their support all the Councillors and other ASBS officers including the Newsletter editors and the public officer/membership officer who have served with me.

WE SHOULD REJOIN FASTS

The general meeting on 28 September will reconsider the decision to withdraw from FASTS. This decision was taken at last year's meeting, somewhat in haste, and at the height of a crisis within FASTS. I will recommend that ASBS should rejoin. During the last year it has become clear that much has changed at FASTS. They have appointed a new executive director. They have rebuilt their bridges with the commonwealth government. They have launched a new strategic science policy for Australia in the next century, and have formally presented it to the minister. (I have a copy for anyone who wishes to read it.) They have improved their communication with member societies; in fact in the last year, we seem to have received more material from them than ever before, despite having withdrawn our membership!

These days governments are continually trying to cut back science funding - all of you are surely feeling the pinch. This can only be countered by high-level lobbying of the government. ASBS may protest loudly, but it is unlikely that our small voice will be heard. We are not skilled or experienced lobbyists. When earlier this year I wrote to the government about woodchipping of native forests, I received no reply. FASTS, however, are in direct contact with

government (see articles in this and previous Newsletters). I believe that we can only have an effective voice in government through organisations such as FASTS and the National Biodiversity Council. Several other societies have already rescinded their decisions or threats to leave FASTS, including the RACI (Royal Australian Chemical Institute), one of the largest constituent societies.

One of the arguments raised against staying in FASTS at the general meeting last year was the membership fee, about \$1400 per year. At the time, this seemed too much, because our finances had been going backwards for a year or so. However, that situation was turned around soon afterwards. Moreover, the fee works out at only \$4 per member per year. Surely we can each afford this small amount.

Part of the problem seems to have been a perception that FASTS activities were invisible

and not relevant to ASBS. Maybe that was partly the fault of our Council, for not passing on information from FASTS to the Newsletter. In the last year I have been trying to remedy this situation, and I hope that this flow of news and views has improved your perception of FASTS. Another way to improve communication between ASBS and FASTS would be to have council (maybe the president) directly represented on the FASTS board. This is something the incoming Council could consider.

Toss Gascoigne, the executive director of FASTS, has written an article in this Newsletter. Please read and consider what he says and, if possible, come to the general meeting, listen to him and question him. I hope that the meeting will then vote to rejoin FASTS.

Mike Crisp

ARTICLES

PATENT ON CLADISTIC ANALYSIS

The following was forwarded by Peter Weston off the INTERNET

----- Forwarded message -----

Date: 3 Aug 1995 13:47:59 +0100

From: Frank Wright <frank@sass.sari.ac.uk>

To: "bionet.molbio.evolution mail newsgroup" <bionet-news@dl.ac.uk>

Subject: Patent on cladistic analysis involving unknown species.

As of March 1995, A European patent has been granted to Bartlett and Davidson on a:

"test to determine an organism's species and/or population identity by direct nucleotide sequence analysis of defined segments of its genome."

(under patent number PCT/CA91/00345, of priority date September 25th, 1991 and the corresponding European Patent number 0550491.

REFERENCES

Bartlett, S.E. and Davidson, W.S. (1991) Identification of *Thunnus tuna* species by the polymerase chain reaction and direct sequence analysis of their mitochondrial cytochrome b genes. *Can. J. Fish. Aquat. Sci.* 48:309-317.

Bartlett, S.E. and Davidson, W.S. (1992) FINS (Forensically Informative Nucleotide Sequencing): A procedure for identifying the animal origin of biological specimens". *Biotechniques* 12(3):408-411.

THE CLAIMS OF THIS PATENT ARE AS FOLLOWS:

"The method of this invention is for the determination of the genus, and then the species, and/or strain, and/or sub species and/or sub-set of a sample of an organism, whether it is eukaryotic or prokaryotic, eg. a mammal, a bird, a reptile, an amphibian, a fish or an invertebrate.

The method is characterised by the steps of: isolating DNA from the sample; amplifying a defined segment of that DNA; determining the nucleotide sequence of that amplified segment; comparing that DNA sequence with a data base of DNA sequences from known species and carrying out a cladistic analysis of these sequence data; thereby to determine the identity of the sample."

They claim that the novel/inventive part of the patent is in using a cladistic analysis to identify an unknown DNA sequence. My understanding is that the patent will also apply to the U.S. but not Australia and Japan.

A colleague, Susan Pryde, is challenging the patent. Details are appended to this article. Susan would be grateful for help in challenging the patent:

- (1) Do you know of papers published before the priority date (Sept 25th, 1991) that use

phylogenetic/cladistic analysis to identify unknown species?

- (2) Would someone be prepared to give advice on terminology? The lawyers are making a big thing that the use of cladistic analysis for identifying unknown species is novel, and that the literature quotes phylogenetic methods. The use of PAUP software is quoted on the Patent.
- (3) Any advice on challenging patents would be appreciated.

More details can be obtained from Susan.

.....
If you'd like to object personally then contact (quoting the European Patent Number 0550491):

European Patent Office
EPA/EPO/OEB
D-80298 Munchen
Germany

.....
Thanks (in advance) for your help.

Frank Wright
Biomathematics & Statistics Scotland
University of Edinburgh, Scotland
frank@bioss.sari.ac.uk

At the CSL Food Science Laboratory (Aberdeen, Scotland), our work on tuna species identification has been challenged as a French company (ATLANGENE) have bought a licence from Bartlett and Davidson.

ATLANGENE claim to be legally the only European group allowed to use this method for species identification. A letter we recieved from them quoted "We must remind you that the FINS

procedure is patented by BIO-ID Corporation Limited (under patent number PCT/CA91/00345, of September 25th, 1991 and the corresponding European Patent number 0550491).

As you know, our laboratory ATLANGENE has, by virtue of an exclusive licence arrangement with BIO-ID Corporation Limited, the exclusive right to use and exploit the FINS technology throughout Europe."

We are currently challenging the patent on the grounds of novelty and obviousness. The "prior art" paper that is the closest related to the patent is:

Rogall et al. (1990) Differentiation of *Mycobacterium* species by direct sequencing of amplified DNA. *J. of Gen. Micro.*, 136, 1915-1920.

However the European Patent commission have ignored it and granted the patent. Anyone that wishes to challenge this patent should do so before December 1995.

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SOME INSIGHTS INTO F. J. H. MUELLER'S MODUS OPERANDI

Jim Ross
National Herbarium of Victoria

Following pressure from Joseph Hooker, Mueller surrendered his ambition to write a universal flora of Australia in favour of George Bentham who produced the 7-volume *Flora Australiensis* (1863 - 1878). Mueller nevertheless assisted Bentham to the extent of sending to Kew, family by family, the entire holdings of Australian material at MEL. The material was sent in metal trunks and remarkably none was lost in transit over the years. Two enduring benefits accrued to Australian botanists from this arrangement. Firstly, Bentham saw a wider range of material than would otherwise have been possible and cited many of the MEL specimens in the *Flora* thus enabling one to gain a better understanding of his taxonomic concepts, and, secondly, the verso of the label of each specimen at MEL that

was sent to Kew was marked with a 'B', usually near a corner, to indicate that it had been seen by Bentham.

A few years ago while sorting material prior to it being sent on loan I came across a specimen of *Sambucus gaudichaudiana* DC. (MEL1595193) which bore the following note "found without label by/ marking them with B/ after the return fr Engl./ Th. Mlr.". This note in Theodor Müller's hand, no relative of Ferdinand, provided the first evidence that I had found of when each label was annotated with a 'B'. It is clear that the 'B' was placed on each label by personnel in Melbourne after the material had been returned from Kew. This makes sense as this information was useful to Mueller rather than to Bentham, and, given the speed at which Bentham wrote the *Flora*, it is difficult to imagine him taking time to annotate the label of each specimen he examined.

Florens Theodor Reinhard Müller was an employee of the Botanic Garden in Melbourne for seven years (1862-69) and resigned on 1 May

1869 (Darragh, 1993). Volume 3 of *Flora Australiensis* containing the account of *Sambucus* was published in 1866. As Theodor Müller resigned in 1869, he was only one member of staff to annotate the labels with a 'B'. It is likely that Ernst Bernhard Heyne, who was employed at the Botanic Gardens in 1854 and acted as F. Mueller's secretary following the appointment of the latter as Director of the Gardens on 13 August 1857, and Johann Carl Wilhelmi, who was on the Gardens staff from 1854 to 1869 and acted as Government Botanist in 1855-56 while F. Mueller was on the North Australian Exploring Expedition, also labelled the verso of labels with a 'B'. Other participants would have been involved over the years but no information concerning them is readily available. Incidentally, the Government Botanist Register of Accounts, 1868-76 (housed in the MEL library) reveals that Theodore Müller was paid eight shillings a day from April 1868 to September 1868, seven shillings and sixpence a day from September to December 1868, and thereafter eight shillings a day until March 1869. F. Mueller's annual salary at the time was six hundred and ten pounds.

The Mueller Correspondence Project, which is a collaborative venture involving the Department of History and Philosophy of Science at the University of Melbourne, The National Herbarium of Victoria, researchers at King's College, London, the Historical Institute at Stuttgart University, and a number of volunteers, seeks to locate copies of Mueller's outgoing correspondence worldwide and copies of replies. The project has been underway for a number of years and correspondence covering the period up to 1859 is being worked on currently with a view to publication. While reading this correspondence, some extremely interesting snippets of information have come to light.

I had often wondered why Mueller never numbered his collections as other early

collectors such as J. Drummond, L. Preiss and F. W. Sieber had done. The reason given by Mueller is that he used names, many of them manuscript names, rather than numbers because of the potential for inaccuracies when using numbers. In a letter to William Hooker written on 5 April 1855 Mueller wrote "It is sad to me also, to see against all my remonstrations, nearly all of my old appellations now in print: most of these names have been **years ago** replaced by more correct ones; they were originated mostly when I was very inexperienced here and much more in want of books than now and should only serve instead of numbers which by a slight inaccuracy lead at once into mistakes." Mueller pursued this theme in his letter to William Hooker dated 11 January 1857 "Had I known that all the manuscript names, which I only applied instead of numbers corresponding with my bot. notes, and as the only means of avoiding confusion in my journals - should appear before the public I certainly should never have send (sic) a single doubtful species at any time to Europe. In my own flora I shall emancipate myself of all useless synonymy." What a pity that he did not use numbers as it would have obviated a great deal of confusion and prevented the publication of countless manuscript names!

Mueller was very liberal with his specimens and dispersed many to other herbaria. J.H. Maiden, in a letter written to Alfred Ewart on 4 May 1917 wrote "I know Mueller's feverish idea to get rid of his duplicates. He used to tell me that he would distribute his duplicates during his own lifetime and leave no man to do it after he was dead. The consequence has been, in the present case (*Acacia delibrata* and *A. oligoneura*), that crucial specimens have disappeared from the Melbourne Herbarium." Of course this was prior to the type concept as we know it to-day but this partly explains why many types which one would expect to find at MEL are not to be found here. Unfortunately the custom by staff of liberally dispersing material (often unicates rather than duplicates) from MEL continued long after Mueller's death.

ACKNOWLEDGEMENT

I am grateful to Sara Maroske, Researcher for the Mueller Correspondence Project, for making available copies of the relevant Mueller letters and for details concerning the employment of E.B. Heyne and J.F.C. Wilhelmi at the Botanic Gardens.

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F. Mueller to W. Hooker, 11 January 1857, Archives, Royal Botanic Gardens, Kew, England, Director's letters, volume 74, Australian letters 1851-1858, letter no. 155.

ROBERT BROWN'S DIARY PUBLICATION LANGUISHES FOR WANT OF A SPONSOR

David Moore and Eric Groves
c/o Botany Library
Natural History Museum
LONDON Sw7 5BD
UK

Flinders's expedition to Australia on the Investigator of 1801-1805 included a naturalist.

He was Robert Brown (1773-1858), later librarian of the Linnean Society (of London), First Keeper of Botany in the British Museum and Fellow of the Royal Society. Brown is best known as a botanist, but he is also well-known in the world of physical science and the phenomenon known to physicists as Brownian Movement commemorates him.

On the voyage to Australia Brown kept a detailed account of his observations on botany, ethnology, geology and zoology. This diary, which for historical reasons is in the Natural History Museum, London (formerly the British Museum (Natural History)), has never been published, although it contains a wealth of detail on all aspects of natural history. The late Professor Tom Vallance of the University of Sydney, Eric Groves and David Moore (both formerly of the BM (NH)) have edited this diary for publication and the work has been accepted by the Hakluyt Society. It is entitled *Nature's Investigator: The Diary of Robert Brown in Australia, 1801-1805*. (Editors T.G. Vallance, E.W. Groves and D.T. Moore).

Transliterating Brown's handwriting, arranging the entries in chronological order, identifying localities and correlating them with Flinders's navigational narrative (Flinders 1814) and accounts of Brown's contemporaries, (e.g. Edwards, 1981; Nicholls, 1977), has proved difficult and has taken us over twelve years. However, we are now able to set out Brown's itinerary of his Australian travels and indicate what was collected. In addition we have traced representative material of the botanical gatherings and some of the geological material associated with Brown's collecting localities and edited the details into notes set out under each days text entry. We have also attempted to set the plant and animal drawings produced by the natural history artist Ferdinand Bauer on mainland Australia in their context. The text (from 14 June 1801 until December 1805) is annotated in detail. The museum originally planned to publish this work, but, because of

financial cut-backs, had to pull out of the project in the late 1980s. (The 'cuts' also meant that the surviving editors had to complete the project on a small grant from the Royal Society and their pensions).

We can state now that the Hakluyt Society are happy to publish the book. It will be recalled that Professor Beaglehole published his account of the journals of the voyages of Captain James Cook through Hakluyt. We believe that *Natures Investigator* is comparable with these works.

However, the Hakluyt Society tell us that there are other works in the queue ahead of us and they have only a limited budget, largely obtained from the subscriptions of their members. (The work they are publishing at the moment is concerned with the Pacific voyage of La Perouse who, incidentally, called at Port Jackson soon after the First Fleet had arrived there in 1788). Consequently, they think that they will be unable to publish our work before the year 2000. Hakluyt tell us that if we can raise some contributory funds the wait can be shortened.

The Australian member of the team, Professor Tom Vallance, died in 1993. We, the surviving editors, are not young men. Also, Professor Vallance's widow in Sydney would naturally enough like to see the completed work. Consequently we are approaching potential sponsors in both Australia and the UK and would be delighted to hear from anyone who can help.

An extract from Chapter 4 of *Natures Investigator* dealing with the events of 2 January 1802 at Princess Royal Harbour, King George Sound, W.A. follows.

Remained on board Described a few plants Mr Good went in search of the pitcher plant ¹ which Messrs Bauer & Westall had found yesterday in flower ² He returned with it in the evening ³

1. *Cephalotus follicularis* Labill., Cephalotaceae. A specimen gathered at

the time is extant in London (Bennett 4398). Bauer drew the plant, now Bauer botany paintings 41-42b and an illustration occurs in Flinders (1814: Atlas) and Norst (1989: p. 27). Brown in Flinders (1814: 2, pp.600-2) gives a detailed description of the plant that grew 'In marshy ground, in the neighbourhood of King Georges's Sound'.

2. Bauer and Westall evidently accompanied Brown on 1 January as Good (Edwards, 1981: p. 53) indicates he went to where Brown had been seen the day before.
3. Good (Edwards, 1981: p. 53) reports making the excursion alone. He does not mention the pitcher plant but records finding 'several new plants seeds & c., also some singular Seaweeds', 'two fine Rivulets of the finest water' and 'a very large black snake'. In a note to this passage Good's editor identifies the reptile as '*Egernia cunninghami* (Gray 1843)' and refers to a painting by Bauer (Bauer 29 - see Wheeler and Moore, 1994). Bauer 29 bears a label with the name cited by Edwards but the reptile depicted is not a snake but a skink which Brown termed, in a MS list of the Bauer zoological paintings, 'Lacerta KG's Sound'. The skink in the Bauer watercolour is clearly localised as coming from Seal Island (see note 4, 22 December 1801).

The snake Good saw this day may well have been the venomous Black Tiger Snake, *Notechis after* (Krefft 1866) ssp. *occidentalis*, Elapidae, which we suggest was also that encountered at the Nuyts Archipelago (note 10, 7 February 1802).

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COMMENTARY

FASTS' POLICY LAUNCHED

The FASTS policy launched at Parliament House in Canberra on June 8 was immediately recognised as a significant input into the Government's important Innovation Statement due for release in late August.

The Minister representing the Minister for Industry, Science and Technology, Senator Schacht, said the proposals in "A science policy for Australia in the 21st century" would be seriously considered in preparing the Statement.

FASTS President Professor Graham Johnston said in launching the policy that a renewed spirit of discovery was sweeping the science community, and that the task was to share that excitement with the wider community.

"Better communication between scientists and other members of the community is vital to Australia's success in the 21st century. The country needs a cultural change in the social perception of science, technology and engineering," he said.

In responding, the Minister said to the audience of 60 scientists and policy-makers

that the Innovation Statement will have the same status as other important Government Statements such as Working Nation and Creative Nation.

The finer detail

FASTS Executive members have participated in a series of meetings with high-level bureaucrats to discuss the finer detail of policies contained in "A science policy for Australia in the 21st century".

The first meeting involved Bob Davidson (Peter Cook's senior adviser) and Peter Morris (Director of DIST's Science and Technology Policy Projects).

The second was with three officers from DIST - Keith Croker (Head of the Innovation Task Force), Andreas Dubs (Assistant Secretary, Science and Technology Division), and Alan Jones (Director, Innovation Task Force).

The document contains 29 policy statements and 46 actions, and Government officials have been eager to discuss the thinking behind these statements and the priority FASTS places on them.

There was a particular sense of timeliness in the meetings with Ministerial advisers and

departmental officials from the Department of Industry, Science and Technology because of the imminent Innovations Statement.

FASTS has also scheduled contacts with the Australian Research Council and relevant Departments including those responsible for Education, the Environment, and Regional Development, and aims to make personal contact with figures in the Opposition and other parties.

Media coverage of FASTS

"A science policy for Australia in the 21st century" attracted positive comment from both general and specialist media, with articles in *The Australian*, *The Sydney Morning Herald*, *The Canberra Times* and a range of journals specialising in science news.

Graham Johnston, Ken Baldwin and Toss Gascoigne were all interviewed on radio, and Ken Baldwin has been approached by Channel Seven's national current affairs show *The Times*.

In an article in *The Canberra Times*, Graham Johnston called for a cultural revolution. He urged scientists and technologists to become more involved with the community so they can be seen as contributing to improvements in the standard of living.

At the same time, financial institutions and industry need to be much more receptive to the benefits S&T has to offer. Journalist Leigh Dayton highlighted industry's abysmal performance in R&D in the *Sydney Morning Herald*; and Ian Lowe led off with a commentary of the turnaround in FASTS' fortunes before concisely summarising the document in *New Scientist*.

The headline in the *Australian* read "Science wins commitment on innovation". Julian Cribb led his article: "The Federal Government and the science community yesterday agreed to join forces to make Australia a more innovative society."

There was a general recognition in the media that this science and technology policy was a newsworthy item.

FASTS director goes West

Recently-appointed Executive Director Toss Gascoigne continued to extend his contact with member societies with a lightning trip to Perth for a Council meeting of the Australian Geosciences Council.

The AGC, a founder member of FASTS in 1986, wanted to discuss its continued involvement in FASTS. Some of the nine societies which make up the Council had been disappointed by an apparent lack of responsiveness to their needs from FASTS during the period when it was reorganising.

Opinions and comments were freely exchanged at the meeting. The new policy document was discussed; and AGC delegates could see value in both the document and in having close contacts with policy makers in Canberra as well as their own States and Territories.

The AGC and FASTS have agreed to work more closely in future, and the meeting ended on a cautiously positive note.

This positive note was extended in discussions between new AGC President Chris Powell (Professor of Geology at UWA), FASTS Board member Colin Branch and Toss Gascoigne. A series of issues and policy initiatives were aired, and this foreshadowed an auspicious start to a new and closer relationship.

Members of the Board, the Executive and the Executive Director all regard personal contact with representatives of member societies as essential to finding out the real concerns of our members.

Please let us know if you would like a FASTS Council Member or the Executive Director to attend one of your meetings.

FASTS Board to meet in Sydney

As part of its policy of broadening accessibility to member societies, the FASTS Board has decided to hold its next meeting at the University of NSW.

Representatives of member societies are invited to come to the meeting between 2 and 3 pm, to meet members of the Board and give personal feedback on the priorities, planning, management and general performance of FASTS.

The meeting is on 2 August. Please contact the FASTS office (contact points below) for further details.

November Council Annual meeting

The FASTS policy document will be one item on the agenda at the annual Council meeting in Canberra later this year, at a meeting which brings together all FASTS members.

The policy has been extremely useful as a basis for making submissions to Government inquiries; and further refinements and re-prioritisation will help keep the document up to date and relevant.

All member societies are invited to send representatives.

The meeting will be held at a time to be finalised, possibly in the week November 6-10. Details will be available after the Board has considered the venue, duration and agenda at its August meeting. The pattern in previous years has been to commit two days. On the first day, Council discusses policy matters, hears guest speakers, and replaces retiring members of the Executive and Board.

The second day has involved a meeting of the outgoing Board and Executive, followed by a meeting of the new Board and Executive.

P.S. This annual meeting is the appropriate place for a detailed discussion of FASTS written policies. But the Executive and Board would welcome any feedback at any time - fax or email the FASTS office.

Mailing lists and newsletters

Your advice please!

Are our newsletter reaching the right people? Please help keep the contact lists up to date; and if there are other people within your society who should be getting Newsletters, send their details in.

If member societies would like to reproduce items from the FASTS Newsletter in their own journals, we can provide an electronic version. Send your requests to fasts@anu.edu.au

World Wide Web for member societies

FASTS Board is investigating setting up a World Wide Web entry, to provide current and easy-access information about this organisation. FASTS aims to have the policy document, constitution, and explanatory material on the formation and achievements of FASTS available; with lists of member societies, Board and Executive members, and contact points. The newsletters could also be posted.

This carries interesting possibilities of putting up similar information about the member societies too.

Cross-references could be made to those member societies which already have a listing on the Web. But would other societies like a listing for their own organisation? This could be ...ranged under the FASTS umbrella.

There would be a fee involved, for labour in entering the material. Let the FASTS office know if you are interested.

Teaching of maths and science in NSW

Ken Baldwin coordinated a FASTS submission to Professor Eltis, Chair of the NSW Review of Profiles and Outcomes. The Review was called by the new NSW government in response to "community and professional concern about the implementation of outcomes and profiles in NSW." Here are a couple of extracts:

"Our main concern with the Outcomes can therefore be summarised in one word: content. Although it is laudable and indeed essential to have discussions about social implications of scientific issues, this cannot be done without a sound, structured and logical development of scientific facts, principles and methods.

"It is FASTS's opinion that the pendulum has swung too much in recent times in the direction of sociological teaching about science, to the detriment of the teaching of science itself ...

"We welcome the inclusion of other strands to the Knowledge and Understanding Strands, that are broadly based around Values and Attitudes, and Skills. These are important aspects of a modern science education and should complement the knowledge gained in the subjects above ...

"However, it is important to stress that the Values and Attitudes Strand should not dominate or replace the acquisition of this knowledge...

"It is the content which requires the most time to assimilate, which then and only then can lead to informed discussion about issues."

Copy of the full submission is available from the FASTS office.

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- 1.5 Australian Society for Microbiology

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- 2.1 Association of Exploration Geochemists
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- 3.2 Australian Mathematical Society
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- 6.1 Australian Neuroscience Society
- 6.2 Australian Psychological Society/Div of Scientific Affairs
- 6.3 Australian Physiological and Pharmacological Society
- 6.4 Nutrition Society of Australia

Physical Sciences

Prof. Bob Crompton

- 7.1 Astronomical Society of Australia
- 7.2 Australian Acoustical Society
- 7.3 Australian Institute for Physics
- 7.4 Australian Optical Society
- 7.5 Australian Society for Electron Microscopy
- 7.6 Society of Crystallographers in Australia

Plants and Ecology

Dr Barry Fox

- 8.1 Australian Society for Plant Physiologists
- 8.2 Australian Systemic Botany Society
- 8.3 Ecological Society of Australia

Associate Members

- 9.1 Australasian Ceramic Society
- 9.2 A'asian Society of Clinical and Experimental Pharmacologists
- 9.3 Australian Entomological Society
- 9.4 Australian Institute of Biology
- 9.5 Australian Institute of Medical Scientists
- 9.6 Australian Nuclear Association
- 9.7 Australian Plant Pathology Society
- 9.8 Australian Radiation Protection Society
- 9.9 Australian Rangeland Society
- 9.91 Australian Society for Medical Research
- 9.92 Australian Society of Rheology
- 9.93 Australian X-Ray Analytical Association

LIBER, LIBER, LIBERA, LIBRA— A NEW LATIN DECLENSION?

or

How to weigh up the difference

Alex George

Yet another partly-nonsensical Latin description (Jones & Clements 1994) prompts me to write about Latin words that I have seen misused on a number of occasions. Using Stearn (1992) or a Latin-English dictionary, try to translate the following into meaningful English: 'Sepalum dorsale librum, . . . Sepala lateralia libra. Petala libra. Labellum librum, . . . Pollinia 4, libra. Stigma librum.' Something to do with the dorsal sepal, labellum and stigma each having or resembling a book or the inner bark of a tree? The lateral sepals, petals and pollinia having or resembling a pair of scales?

The word 'liber', in its adjectival meaning 'free', should be declined like 'florifer' (Stearn p. 91), but is sometimes wrongly declined like 'glaber' (Stearn pp 91, 92). The stem of the adjective 'liber'

is the same as its nominative form, in contrast to 'glaber' for which the stem (in all cases except the nominative singular) is 'glabr-'. The form 'libr-' is the stem of the noun 'liber'. There is no adjectival form 'libra', this word being a noun meaning a balance or pair of scales, or a Roman pound of 12 ounces. Following is a guide to these words.

liber (noun), masculine, 2nd declension, originally the inner bark of a tree, a material upon which to write, hence by analogy a book. It is declined thus: *singular* liber, librum, libri, libro, libro; *plural* libri, libros, librorum, libris, libris.

liber (adjective), Stearn group A, free, not joined together. It is declined thus: masculine—*singular* liber, liberum, liberi, libero, libero; *plural* liberi, liberos, liberorum, liberis, liberis; feminine—*singular* libera, liberam, liberae, liberae, libera; *plural* liberae, liberas, liberarum, liberis, liberis; neuter—*singular* liberum, liberum, liberi, libero, libero; *plural* libera, libera, liberorum, liberis, liberis.

libra (noun), feminine, 1st declension, a balance or pair of scales, or a pound of 12 ounces, declined thus: *singular* libra, libram, librae, librae, libra; *plural* librae, libras, librarum, libris, libris.

Perhaps translators who have confused these words have been under the influence of Bacchus, whose wife Ariadne was sometimes known as Libera. Libera was also an alternative name for Proserpine, daughter of Ceres, sister of Liber, an Italian deity presiding over agriculture and later identified with the Greek god Bacchus.

Or maybe they had stars (especially the constellation Libra) in their eyes?

Simple, isn't it?

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- Stearn, W.T. (1992). *Botanical Latin* 4th edn, David & Charles, Newton Abbot.

REPORTS

NATIONAL BIODIVERSITY
COUNCIL

PO Box 12210, A'Beckett St, Melbourne 8006

The National Biodiversity Council (NBC) is a group of scientists committed to the scientifically based conservation of biodiversity. It is independent and national in focus. It was formed in December 1994 so that scientific views and insights could influence public debate and decision-making about biodiversity in Australia.

The goals of the NBC are to:

- advocate the scientifically based conservation of biodiversity
- Inform Australians of the importance, values, benefits of and threats to biodiversity
- promote multidisciplinary forums for Australian scientists concerned with biodiversity
- promote policies and mechanisms for the conservation of biodiversity
- stimulate informed public discussion of biodiversity as part of decision-making processes

The twelve members of the Council are elected by and responsible to an Assembly, composed equally of representatives nominated by participating scientific societies, and elected individuals.

The members of the founding Council are:

Professor Roger Kitching, Chair
Professor Andy Beattie, Deputy Chair
Professor Hugh Possingham, Deputy Chair
Mr John Bradsen
Dr Tim Entwisle
Professor Bob Hill
Dr Pierre Horwitz

Dr Gary Poore
Professor Harry Recher
Dr Deborah Rose
Dr Denis Saunders
Dr Judy West

Dr Ian Noble is the Secretary of the Council.

Mailing List

The Council plans to circulate occasional information bulletins on current issues. If you are interested in remaining on the mailing list to receive these bulletins and other information from the Council, please return this form.

Forest workshop

Similarly, if you would be interested in attending a workshop about the Commonwealth's proposals for interim protection of forests, please return the form.

Name:
Address:
.....
Postcode:
Ph:
Fax:
Email:

I would like to receive future NBC information bulletins ☐ Yes ☐ No

I would be interested in attending a workshop on interim protection of forests if it were held in Sydney, Canberra, Melbourne, Hobart.

Please return by 4 August to:

National Biodiversity Council
PO Box 12210
A'Beckett St
Melbourne Vic 8006

PROGRESS REPORT

July 1995

The National Biodiversity Council (NBC) was launched in December 1994, and held its first meeting in February 1995. At that meeting, the Council agreed to make four issues a priority: clearing of native vegetation, forest conservation, exotic plants and animals, and promotion and education about biodiversity. This report summarises the Council's activities to date on these issues as well as progress in establishing the National Biodiversity Council as an organisation.

HALTING CLEARING OF NATIVE VEGETATION

The Council regards clearance of native vegetation in Australia as the primary cause of past, current and predicted future losses of biodiversity for most groups of terrestrial animals and plants, and for many freshwater and marine animals and plants. This issue was the focus of the media release which accompanied the launch of the NBC.

The Council is preparing a statement and position paper on the clearing of native vegetation, based on the work already done by the Ecological Society of Australia, and is considering hosting a workshop in 1996 to evaluate the effectiveness of mechanisms to control clearing and protect native vegetation. The scientific societies will be invited to give their support to the position paper and to participate in the workshop and other activities.

CONSERVING NATIVE FORESTS

Forest conservation is currently high on the political agenda, and the subject of various Commonwealth Government initiatives. The Council has made media releases about forest conservation, presented a submission on the Commonwealth's proposed forest reserve criteria, and sponsored a symposium jointly with Edith Cowan University on *The Design of Reserves for*

Nature Conservation. A separate information package will be circulated shortly inviting broader involvement by scientists and scientific societies in the current process to define forests which can be logged, pending decisions on a comprehensive and adequate reserve system.

The Council considers that the current reserve system is neither representative of forest biodiversity nor adequate to protect forest biodiversity through the next century. It intends to remain closely involved in the ongoing debate.

HALTING THE PROLIFERATION OF NONINDIGENOUS ORGANISMS IN AUSTRALIA

Weeds and pests threaten remnant habitat throughout Australia, displacing native biota and upsetting finely balanced ecosystems, both terrestrial and aquatic.

The Council is evaluating the current situation, as a prelude to preparing a position paper and identifying priorities for action.

COMMUNICATING WHAT BIODIVERSITY IS AND WHY IT IS IMPORTANT

The Council considers that a crucial part of its role is to explain the concept of biodiversity. Council members have represented the NBC in conferences, talks and in media interviews, taking the opportunity to promote both biodiversity and the Council. Council members have also identified areas of expertise, on which they are prepared to comment on behalf of the NBC. Once the Council is incorporated, and has the resources to support it, a co-ordinated publicity strategy will be implemented.

LIAISING WITH THE COMMONWEALTH GOVERNMENT

The Biodiversity Unit of DEST has welcomed the establishment of the NBC. At their invitation, the Council prepared a proposal to co-ordinate a

major project on *The Future of Australia's Biodiversity*, to bring together comprehensive information on the future of our biodiversity and ensure that it is disseminated to the public. This proposal is under discussion. The NBC is also co-sponsoring a conference organised by DEST on *Bioregional Planning* in Melbourne at the end of October. The Council has also made submissions on the *Ecological Communities Discussion Paper* prepared by ANCA, and was represented at a recent discussion concerning *The Need for and Modalities of a Biosafety Protocol under the Convention on Biological Diversity*.

ESTABLISHING THE NATIONAL BIODIVERSITY COUNCIL

The main tasks to consolidate the formation of the NBC are to complete the establishment of the organisation, obtain ongoing funding, and establish mechanisms for regular communication with the assembly and scientific societies.

Communication

In order to keep assembly members up to date on the activities of the Council, we intend distributing bulletins and releases via electronic mail. The Council is also considering which ongoing services it could most usefully provide. These proposals are outlined separately.

Organisation

The Council will seek incorporation in Victoria, and also apply for tax deductibility through listing on the register of environmental organisations kept by the Department of Environment, Sports and Territories. To achieve this, some changes are required to the constitution. The proposed changes are included separately. The Council is also investigating the possibility of sharing office space with a compatible organisation, has a post office box, and is having a letterhead and logo designed.

Funding

Representatives of philanthropic organisations were invited to meet and be briefed about the

Council during its February meeting. Several attended and were very positive about the potential for supporting the NBC. Applications for funding are being prepared. An earlier application to the Reichstein Foundation resulted in a grant of \$3000 to the Council.

INFORMATION BULLETIN

1 July 1995

FOREST RESERVES

In March this year, the Commonwealth Government released a discussion paper setting out its proposed criteria for developing a comprehensive, adequate and representative (CAR) system of forest reserves. The National Biodiversity Council (NBC) is of the opinion that implementation of such a reserve system, and particularly the protection of old growth forests, is crucial to the long term conservation and management of Australia's biodiversity. It is accordingly taking an active role in the process through making submissions, circulating information and organising forums for discussion.

On 4 July the Commonwealth announced its preferred criteria for a CAR system of forest reserves.

These criteria will be used in two ways:

- * to identify areas for interim protection (deferred forest areas - DFAs) during the period that full assessment is undertaken
- * as the Commonwealth's preferred position in negotiating nationally agreed criteria with the States for the CAR reserve system.

In the short term, the NBC is particularly concerned to see that the development of an

adequate and representative reserve system is not compromised by logging while the assessment takes place. We have therefore proposed that the Commonwealth should reverse its procedure for interim protection. Rather than attempting to identify and protect all the areas that may be needed for the reserve system, it should instead identify areas where logging can proceed with least risk, until regional forest agreements are completed.

This bulletin outlines how the Commonwealth intends to develop the reserve system, and invites the participation of scientific societies and scientists in the process.

INTERIM PROTECTION

Commonwealth process

Areas for interim protection are to be agreed between the Commonwealth and States by late August 1995 and will last for up to five years. They will be used to decide export woodchip licences for 1996 and beyond, pending finalisation of Regional Forest Agreements which will incorporate the CAR reserve system. The Regional Forest Agreements may be completed within two to three years and must be completed by the year 2000.

The Commonwealth proposes to use its preferred criteria to negotiate forest areas for interim protection (these are the Deferred Forest Areas - DFAs). A report outlining the methodology and presenting draft DFAs will be released for two weeks' public comment in mid-August, before final agreements are made with the States. Export woodchip licences are to be issued by the end of September 1995.

REGIONS

The States to which DFAs apply are Tasmania, WA, Victoria and NSW. Queensland has no current export woodchip licences and it is not therefore intended to implement DFAs. The

approach for identifying DFAs will differ from State to State:

Tasmania: will be treated as one region for negotiating DFAs, but the data will be stratified according to the Interim Biogeographic Regionalisation for Australia.

WA: will be treated as one region for negotiating DFAs.

Victoria: regional approach still to be decided.

NSW: regional approach still to be decided.

NBC PROPOSALS

The NBC has written to the Prime Minister proposing that the process for DFAs should be reversed. It should aim to identify forest areas where logging can take place in the interim with least risk of compromising the achievement of a CAR reserve system. This is a precautionary approach, which is also better suited to rapid assessment.

The NBC is further considering sponsoring a small number of workshops to give scientists an opportunity to comment directly on the arrangements for interim protection. The workshops could aim to assess and apply criteria for identifying areas least at risk from continued logging, and to evaluate the methodology and DFAs proposed by the Commonwealth. Provided there is enough interest, the workshop/s are likely to be held in the second half of August. If you would like to participate in such a workshop, please return the enclosed form by the 4th of August.

NATIONALLY AGREED CRITERIA FOR A COMPREHENSIVE, ADEQUATE AND REPRESENTATIVE RESERVE SYSTEM

Separate from the recently released, preferred Commonwealth criteria, another group comprising representatives of the Commonwealth, States and Territories has developed its own criteria, shortly to be released

for public comment. These are known as the JANIS criteria (from the acronym of the impossibly long name of the sub-committee).

It is intended that national criteria will be developed from the Commonwealth and JANIS papers by the end of 1995. If no agreement can be reached the Commonwealth will use its criteria as a base for bilateral discussions and agreement with each State.

The national criteria will then be applied to assess the adequacy of the existing reserve system and identify additional requirements. This will be a lengthy process over two to five years.

THE DESIGN OF RESERVES FOR NATURE CONSERVATION IN THE DARLING BOTANICAL DISTRICT, SOUTH-WESTERN AUSTRALIA

June 26th 1995

Sponsored by the National Biodiversity Council and the Centre for Ecosystem Management, Edith Cowan University

SYMPOSIUM STATEMENT

Presented to a meeting of Commonwealth and State agencies concerned with Regional Forest Agreements, 27th June 1995, Department of Conservation and Land Management offices, Crawley.

On June 26th 1995, over 100 scientists and members of the public met in a Symposium to consider the design of nature reserves in the southwest of Western Australia. The focus was on the geographical area bounded by the 800 mm isohyet, a region incorporating most of the forested parts of the southwest, as well as coastal areas and other non-forest ecosystems.

The symposium covered a number of issues, **but with respect to the forest reservation issue** it was observed that:

1. Scientific concern for the management of, and well being of, natural ecosystems was not being effectively incorporated into decision-making. In particular, there has been a long history of scientific advice which has not been heeded. For example:
 - it took nearly 70 years before scientific advice concerning the inevitability of salinisation following clearing was taken up.
 - scientific advice concerning the effects of applying nutrients on agricultural land on eutrophication of waterways remains to be seriously taken into account.
 - scientific advice concerning the effects of clearing of lateritic soils for pasture/horticulture results in nitrogen inputs into the soil which increases acidification, which in turn increases aluminium toxicity and severely decreases agricultural productivity.
- This inability to act on scientific advice has an enormous economic cost to society in the present day need for restoration of degraded land and water, and the loss of productivity.
2. The scientific advice concerning the issue at hand is that the biodiversity in the area under consideration for this symposium is still inadequately conserved.
 3. In particular, the region has very special natural characteristics which make biodiversity conservation of paramount importance.
 4. The region has acted as a refugium for plants and animals during the arid phases associated with the ice ages. The region contains the

equivalent of half a continent's remaining cool and wet adapted biota, and many of these species remain undescribed by science.

5. Of particular importance are:

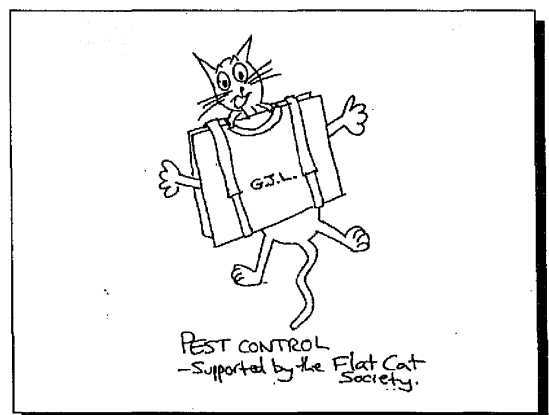
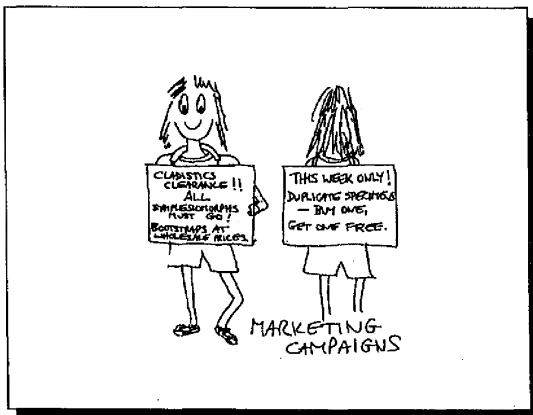
- rock outcrops and their associated and adjacent flora and fauna
- swamps, peatlands, heathlands and headwaters of rivers and streams and their associated flora and fauna organic, rich moist microhabitats.

These ecological communities:

- contain gondwanan (ancient supercontinental) relictual species, and/or species which are restricted in their distributions;
- exhibit 'rapid replacement', where adjacent communities of similar ilk will contain different suites of plants and animals;
- are often embedded within forests, particularly where canopy intact old growth vegetation exists; this mimics gondwanan habitats;
- do not benefit (= are directly threatened) from existing human activities which

result in salinisation, eutrophication, acidification, and sedimentation of land and water, and altered fire regimes.

6. A forest reserve system cannot confine its attention to forest communities only since these other ecological communities occur embedded within forests. Reservation must consider forests as part of an ecosystem in a bioregion.
7. Criteria for reservation must acknowledge that clearing, selective logging, roading, regeneration burning, and fuel reduction burning will impact negatively on these ecological communities, and biodiversity will be lost.
8. There is an imperative for achieving the adequate reservation of forest communities and observing the minimum criteria given in the Commonwealth's Discussion Paper. In addition, reserves must include non-forest communities within forested areas, and must include buffers of forest communities in addition to the reservation of forest communities per se.
9. The scientific community has a substantial contribution to make through its information base, and enthusiasm. Any commonwealth/state negotiations need to ensure a dialogue exists so that this information base can be properly accessed.





**Australian
Botanical
Liaison
Officer**

JULY-AUGUST ABLO REPORT

Barry J. Conn

Professor G. Lucas' Retirement as Keeper

On 27 July 1995, in Wing C of the Herbarium, the Director paid tribute to Gren Lucas on the occasion of his retirement as Keeper of the Herbarium. Gren was presented with a water-colour painting by Pandora Sellars of Abutilon 'Suntense', 'The Natural History of Sellborne' by Gilbert White, and 'British and Irish Botanists and Gardeners' by Ray Desmond. A beautifully inscribed card signed by all his colleagues at Kew showed their appreciation of Gren's efforts on their behalf over the years. During the evening, Mr John Simmons and Gren hosted a party for colleagues and friends on the paddock beside the Herbarium. About 500 people enjoyed a lovely summer evening with music supplied by a steel band and a jazz group. It was a thoroughly enjoyable evening.

INDIAN BOTANICAL LIAISON OFFICER

On the 9 August 1995, Dr S.K. Murti began a two year appointment to Kew as the Indian Botanical Liaison Officer. His research interests at Kew will focus on the genera *Pilea* and *Elatostema* (Urticaceae) for the 'Flora of India.' He completed an account of the Elaeocarpaceae

for volume 3 of the 'Flora of India.' In India, he is presently posted at the Northern Circle, Botanical Survey of India, Dehradun.

News from Manaaki Whenua Landcare Research (CHR), New Zealand

The following botanists have retired from CHR: Bryony MacMillan (Assistant Herbarium Keeper, particularly well-known for her contributions to Allan's Flora of New Zealand, also working on *Acaena*), Brian Molloy (Taxonomist, particularly orchids and conifers), Peter Wardle (Plant Ecologist and taxonomist, particularly known for Vegetation of New Zealand, currently working on *Hebe hectori*). Colin Webb has also left CHR and is now Manager of the Public Good Science Fund at the Foundation for Research, Science and Technology, in Wellington.

NEWS FROM ROYAL BOTANIC GARDENS, KEW

The Official Opening of the Evolution House

His Royal Highness The Prince of Wales officially opened the new Evolution House on 6 July 1995. This display is one of a new type of display at Kew which features ecological themes in realistic landscapes, using both living plants and reconstructions of fossil taxa.

The Banks Garden

The plantings around the Banks Building are now known as 'The Banks Garden'. This is intended to reflect the planting theme of 'useful plants' as well as the links to the building itself and to Banks' entrepreneurial interest in economic botany. Additional interpretive labels were installed to explain the usefulness of the plants in the garden.

Kew's giant waterlily

The plants of *Victoria amazonica* 'Longwood Hybrid' in the Princess of Wales glasshouse produced leaves of 8 foot 6 inches, which exceeds the 8 foot span previously recorded in the Guinness Book of Records.

Staff News from Kew

On 24 July 1995, Nigel Taylor and his wife Daniella Zappi, had a baby girl, Vanessa Zappi-Taylor. Perfect, naturally!

The Director of the Royal Botanic Gardens Kew, Professor Sir Guillelan Prance, received a Knighthood in the Queen's Birthday Honours for scientific services to conservation. He was named a Knight Bachelor on the Prime Minister's list. He also received Brazil's highest scientific award, the Ordem Nacional do Merito Cientifico (Brazilian Order of Science Merit) in the grade of Gra Cruz (Great Cross) and an Honorary Doctorate from St Andrews University.

Ray Desmond, former Librarian, RBG Kew, was awarded the Library Association's McColvin Medal for his Directory of British and Irish Botanists and Horticulturists (1994). The medal is an annual award for an outstanding reference book.

Death of Geoffrey Dennis, Solomon Islands

Mr Geoffrey Dennis died in Honiara, Solomon Islands, on 18 August 1995 at the age of 76. He had lived on Guadalcanal since 1946 and had established the Honiara Botanical Garden and Herbarium. He was an active collector on the BSIP expeditions of 1965 and was Tim Whitmore's main collector and colleague during the latter's work on the forests of the Solomon Islands. Although Geoff retired in 1965, he

continued to help visiting botanists and horticulturists. He will be missed by friends and colleagues for his broad knowledge of the Natural History and ethnobotany of the Solomon Islands.

Visitors to Kew

June 1995. Enid Mayfield (Geelong, Victoria) and Margaret Saul (The Gap, Queensland), both botanical illustrators visited the Herbarium and Library. They both spent a profitable time discussing illustrative techniques with the illustrators of Kew.

July 1995. There were many visitors who used combined a visit to the herbarium while attending the Third Flora Malesiana Symposium, 10-14 July 1995 and the Eric Holttum Memorial Pteridophyte Symposium, 17-21 July 1995. Visitors included John Conran (AD - *Cordyline*, *Dracaena* and Commelinaceae), Mary Tindale (NSW - *Acacia*), and Judy West (CANB).

2 August - 1 September 1995. Miss Kerry Ford (CHR). Firstly, apologies to Kerry. In the last issue of the Newsletter (No. 83), I inadvertently referred to Kerry as Kerry Parsons! Without a name change, Kerry successfully completed the International Diploma Course in Herbarium Techniques, and has since worked on miscellaneous families of particular relevance to the Flora of New Zealand.

The Year That Was!

It is very difficult to summarise such an eventful year without it degenerating into an incoherent blur of images; old friends and new acquaintances, ghastly and exciting places, super-fast trains and one smoke-belching VW caravelle named Jerome (that will surely make a great pot-plant for some lucky person), herbaria with incredibly rich collections (for many, time

appears to have passed by), bank balances (what a stupid term) hovering near or below zero (which provide and sustain higher levels of adrenaline than does bungie jumping), and of course, history (much more than I did not listen to at school).

It has been an incredibly enriching twelve months and I am particularly indebted to my many European friends and colleagues who have so generously offered their friendship and assistance. I extend my thanks to all the curators and staff of the various herbaria that I visited. I am especially grateful to the staff of Kew and the Natural History Museum for everything that they have done for me and my family during my period as ABLO. Their continued support ensured that my term was extremely productive and informative. Although I could list all the staff at Kew, I would particularly like to thank Brian Stannard for generously and selflessly assisting me and my family wherever possible.

Back in August 1994, some of the staff at NSW no doubt celebrated my departure to the UK. However, I continued to be a nuisance, perhaps more so than if I had stayed in Sydney. I would not have been able to achieve a fraction of what was done during the year without their help. I wish to especially thank Elizabeth Brown, Andrew Doust and Peter Richards for their generous and continuous assistance throughout the year. They made it possible for me to complete several manuscripts so that they could be submitted for publication.

Bob Makinson (CANB) has now taken over from me. I wish him a most enjoyable and productive year as ABLO.

NEW ABLO INSTALLED

Bob Makinson (CANB) has taken over from Barry Conn as ABLO at Kew. The ABLO email address is ablo@rbgkew.org.uk. If for some reason you cannot access this address, email

routed to rom@anbg.gov.au will be automatically forwarded. The ABLO phone (direct) at Kew remains: 0011 44 181 332 5432, and the fax remains 332 5278.

Bob advises that he can provide a spare bed for Australian botanists visiting London, but please check with him first - some periods are already booked! Bob's itinerary for visiting other centres in Britain and Europe is not quite finalised, but will include Cambridge, Edinburgh, Paris, Prague, and Geneva. The European leg is not likely to be until February or March 1996. Details of the itinerary will be forwarded to CHAH affiliates and ABRS as soon as final, for circulation to staff. Enquiries relating to herbaria in these centres can be lodged with the ABLO at any time from now on.

A teacher forwarded this list of comments from test papers, essays, etc., submitted to science and health teachers by elementary, junior high, high school, and college students. As she noted, "It is truly astonishing what weird science our young scholars can create under the pressures of time and grades."

"H₂O is hot water, and CO₂ is cold water."

"To collect fumes of sulphur, hold a deacon over a flame in a test tube."

"When you smell an oderless gas, it is probably carbon monoxide."

"Water is composed of two gins, Oxygen and Hydrogin. Oxygen is pure gin."

Hydrogin is gin and water."

cont...

**Australian****Biological****Resources****Study**

Have you ever noticed that just when you think you have the system licked, and you have dragged yourself to the top of the tree, someone comes along and gives the trunk a severe shaking? Something of the kind has happened to ABRS Flora Section in the last 3 months. Earlier this year I reported that our editing and publishing program was just beginning to get into its stride, and that we expected four volumes of the Flora of Australia / Fungi of Australia to go to press during calendar 1995 with perhaps four more in 1996. This was obviously considered by the Fates to be overly ambitious, because it all came tumbling down in June/July. With only a couple of weeks of warning Helen Hewson was transferred to a new position in the Centre for Plant Biodiversity Research (CANB), as Deputy Director, and I became Acting Director, ABRS Flora. At the same time Patrick McCarthy became Acting Executive Editor. Coincidentally, Cheryl Grgurinovic departed on 18 months study leave to complete her Ph.D., and Katy Mallett is currently acting in her position. The above, together with the normal winter colds and flu, has thrown the ABRS staff establishment into chaos, and our publishing schedules followed. Helen's departure was a particularly severe blow, as she had been with ABRS almost since its inception. She had a wealth of knowledge on the program, its history and its practices. Her tribal knowledge and her cheerful, encouraging leadership will be sorely missed.

All is not lost though. On 28 August Dr Gwen Shaughnessy took over as Director Flora, on an extended temporary basis, allowing most of us to get back to editing in our normal positions. We have probably lost 2 to 3 months of momentum, but least laggardly authors feel that this will let them off the hook, I should add that we hope to make most of it up by the end of the year.

FLORA OF AUSTRALIA SUPPLEMENTARY SERIES NO. 4

The Bibliographic Checklist of Non-Marine Algae in Australia, foreshadowed in the June Newsletter has now been published, and a brochure is included in this Newsletter. This book is the first step towards producing an APNI of freshwater algae in Australia and will be invaluable to those researching this particular group of plants. It contains an enormous quantity of information on the names that have been used in Australia, representing many years of painstaking cross-referencing by Tim Entwisle and Peter Tyler, and a massive collation job by Sandra Day and Rosemarie Wickham.

FLORA OF AUSTRALIA VOLUME 16, ELAEAGNACEAE, PROTEACEAE 1

This long-awaited first part of the Proteaceae volumes of the Flora was sent to the printer in late July. With an extra block of colour plates, and extensive line drawings from a range of artists, it will be one of our best illustrated Flora volumes, and is also one of the larger ones, with 541 (xxi + 520) pages. The majority of the volume describes Proteaceae, with a lengthy introduction covering systematics, morphology, biology, pollination biology, palaeobotany and utilisation of the family, followed by the usual systematic descriptions. The latter cover all of the family except tribes Grevilleae and Banksieae, which will make up volume 17, expected to go to press in the first half of 1996. Volume 16 contains an unusually large number of new taxa and new combinations (including 2 new subfamilies) and

will be required reading for all those interested in Proteaceae.

FLORA OF AUSTRALIA VOLUME 28 GENTIANALES

This volume is rapidly approaching completion and should be with the printer by September / October, with publication in late 1995 or early 1996. It contains 4 moderate-sized families, Loganiaceae, Gentianaceae, Asclepiadaceae and Apocynaceae, and again contains much new research and a range of new taxa. The cover painting by Margaret Saul

features one of Australia's more spectacular Asclepiads, *Hoya macgillivrayi*.

FUNGI OF AUSTRALIA VOLUME 1 INTRODUCTION

We plan to launch this new series of handbooks in late 1995 / early 1996. The introductory volume will consist of a series of essays on fungi (sens. lat.) in Australia, covering everything from a key to Orders to discussions of fungi in a range of habitats. In fact, the response from authors has been so enthusiastic that we have had to split the volume into two. Volume 1A will contain what might be described as the "General" chapters, including the massive Classification and Key to Orders by John Walker, History of Australian Mycology (Tom May & Ian Pascoe), Biology of Fungi (Ian Pascoe & Warren Shipton), Biogeography (John Walker), Fossil Record (Elizabeth

Truswell) and the Glossary (Cheryl Grgurinovic). We hope that this part will be published by the end of 1995. A few months later, in early 1996, Part 1B should also be available, surveying Australian fungi on an ecological / habitat basis. We will have chapters on Aboriginal use of fungi, fungi in soils, in fresh-water, in marine habitats, as plant parasites, as wood decay organisms, as a food resource for animals, as insect commensals and diseases, as gut organisms, as toxins, as human disease organisms, and much more. These two books will be invaluable overviews of this neglected group of organisms in Australia, and will set a magnificent backdrop for the taxonomic volumes which will follow. The launch of this series will be a major landmark for taxonomic biology in Australia, at least of the same order of magnitude as the launch of Flora of Australia in 1981, and we intend that you will hear a lot more about it in the near future! Flora of Australia Volume 1 - Interactive Key As foreshadowed in the March Newsletter we have now circulated a checklist / questionnaire to a range of taxonomists in Australia and abroad, in an attempt to gather information on the Australian facies of vascular plant families recorded from this country. Initially reaction has been mixed, with some minor pockets of resistance, but in general the response has been positive, and we are confident that an interactive key will form part of the new second edition of Flora of Australia Volume 1.

Tony Orchard

Executive Editor, Flora of Australia

... from page 22

"Three kinds of blood vessels are arteries, vanes and caterpillars."

"Blood flows down one leg and up the other."

"Respiration is composed of two acts, first inspiration, and then expectoration."

REVIEWS

KANGAROO APPLES

By D.E. Symon. Published by the author,
Adelaide. 1994. iv + 56 pp.

ISBN 0 646 19905 6

\$25 plus \$2.65 postage (if outside South
Australia)

Kangaroo Apples (*Solanum sect. Archaesolanum*) are familiar plants to anyone living in New Zealand or temperate Australia, and they are among the few Australasian plants to have been commercially exploited to any significant degree. While there is much published information on this group of plants, most is widely scattered throughout the literature and a fair proportion is in languages other than English. In this monograph David Symon has brought together this scattered information, along with over 40 years experience with these plants, to provide the first comprehensive treatment of the group outside of strict taxonomic works. The book is divided into eight chapters (including the introduction, acknowledgments and bibliography), covering all aspects of the biology and evolution of these plants, such as the history of their discovery by European botanists, ethnobotany, husbandry and cultivation, exploitation of alkaloids and of course taxonomy; these chapters are then further subdivided into sections dealing with various aspects in greater detail.

Chapters 5 (Alkaloids) and 6 (Cultivation) are particularly illuminating as they deal with the history of Kangaroo Apples as crop plants for the production of steroidal alkaloids. A large industry based around these plants existed in the USSR between the 1950's and the early years of the current decade, with over 400 papers dealing with agronomic aspects of this new crop

published during this period. New Zealand and especially Australian attempts at a similar industry were largely unsuccessful and the reasons for this make for some interesting reading. For those with a desire to know more about the agronomy and economics of these plants, the comprehensive bibliography provides an excellent list of further reading.

As one would expect, the systematics chapter is the longest and most detailed; in addition to a full description of the section and discussion of infrageneric and infra-sectional relationships (the former hampered by the huge size of the genus and the uneven state of taxonomic knowledge regarding it?), there are sections on phenology, distribution (with maps), fruit predation and dispersal, genetics and breeding systems, weediness and detailed information on fruit and seed characters, which form much of the basis of species discrimination in this group. Descriptions for each taxon along with full synonymy is also given, taking into account for the first time the many infra-specific names published by Russian agronomists during the peak of research on Kangaroo Apples in that country. The three keys to species based on leaves, fruit and seed will be a welcome help to anyone who has ever (figuratively) torn their hair out trying to identify inadequate specimens of these plants.

A short section by Bill Barker on the phylogeny of the Kangaroo Apples is also presented. Unfortunately this is only a preliminary view of the evolution within the section, as time constraints (publication was timed to coincide with the Solanaceae Conference in September 1994), prevented further analysis of the existing data, something which also affected other Conference delegates. Nevertheless it provides a basis from which future work can progress.

One of the most eye-catching features of the book, apart from the rather garish purple cover, are the illustrations. A selection of half-tone photographs, including SEM's of etched seeds (an under-appreciated character in Solanaceae taxonomy) and x-ray's of adult leaves are included, but what really stand out are the eight plates by Gilbert Dashorst. A fertile branch of each species along with details of flowers, fruit, seed and other features are presented, making it the first time all eight known taxa have been illustrated together, and the first colour illustration of the New Guinean endemic *Solanum multivenosum*. The only disconcerting thing about the plates is that half the subject is in full colour, while the rest is in half-tone; I personally would have preferred the entire plates in colour, but this by no means detracts from the excellent quality of the illustrations.

In short, this book would be a welcome addition to the libraries of anyone with an interest in the Solanaceae or indeed the Australasian flora in general. The text and layout is clear and easy to follow, and there are no obvious typos or errors. *Kangaroo Apples* is presently only available from the author at AD. Write to: David Symon, c/o State Herbarium, Adelaide Botanic Gardens, North Terrace, Adelaide, South Australia, 5000.

Brendan Lepschi
PERTH



A WOMAN IN THE WILDERNESS

The Story of Amalie Dietrich in Australia.
by Ray Sumner.

New South Wales University Press, Kensington.
1993. 161 pp.
ISBN 0-86840-197-8. \$19.95.

Amalie Dietrich was one of those outstanding women of the 19th Century who left the comforts of Europe to endure the hardships associated with Australia during its development. The difference between Dietrich and the majority of the women who came to Australia was that she was employed to come here, rather than accompany a spouse.

She arrived at Brisbane in 1863 as a paid collector for the Godeffroy Museum in Hamburg and was to spend the next ten years in Queensland making extensive botanical, zoological and anthropological collections. She slowly travelled up the coast of Queensland, staying in the newly established settlements of Rockhampton, Mackay and Bowen. She also made forays inland from Rockhampton and spent time in the outpost of Lake Elphinstone, south-west of Mackay which proved to be rich in birdlife and unusual plants.

What is astounding is that she spent much of her time in Australia without a companion or collecting assistant; which even for colonial Australian standards was a definite break away from the social etiquette for a lady. Dietrich never described a species, though a number of her specimens became type material. She is also credited with collecting some of the most dangerous reptiles in the world. Dietrich collected the type material of the taipan - reputed to be the deadliest snake, and she supposedly shot and skinned a 22 foot crocodile. Having seen, at close range, an 8 foot 'croc' from the safety of a pleasure boat on the Daintree River, it is not something I would be prepared to do.

Although she made outstanding botanical and zoological collections, her contributions to anthropology are not so admirable. During this period of history, there was a craze in Europe to support the theory that Europeans were superior to all other races through the measurements of the skull. Dietrich is said to have sent back to Germany no less than 8 skeletons from Bowen, a skull from Rockhampton and a tanned skin. A number of unsubstantiated local legends along the Queensland coast have a German speaking woman asking the local property owners to shoot one or two Aborigines on their land so that she can have their skeletons.

Unfortunately, few primary sources are available concerning Amalie Dietrich. Her daughter, Charitas Bischoff, in 1909, wrote a fictionalised account of her mother's life and deliberately destroyed most of the family papers. To make matters worse, she plagiarized most of the scientific information from Carl Lumholtz's account of his time spent looking for the tree kangaroo near Cardwell in the wet tropics (Dietrich never visited the wet tropics).

Ray Sumner makes a valiant attempt to sift through Bischoff's book separating facts from the myths. For example, according to Bischoff, Dietrich visited Mueller and Neumeyer (the astronomer) in Melbourne just before her voyage home. Sumner, using shipping lists, suggests that this was highly unlikely as there was not enough time to sail from Melbourne to Sydney to catch the ship home to Hamburg, nor is there any evidence of a meeting in Mueller's correspondence housed at MEL. Sumner suggests Dietrich may have been encouraged by the local naturalists to send specimens to Mueller in Melbourne, thus explaining the presence of Dietrich specimens in MEL; specimens that bear no sign of ever having been sent to the Godeffroy Museum in Hamburg.

Prospective readers should be warned that this book is written more in the style of a formal history rather than in the style of most popular

biographies that are currently available, and obviously forms a significant part of Sumner's Ph.D. thesis. Hence, parts of the book get bogged down with semantics over what are reliable primary sources. An important point when trying to separate the facts from the myths that surround Dietrich's activities in Australia, but not something the general reading public tend to want to read. As this book is written by a historian not a biologist, the science takes second place to the human interest story - in particular the relationship between Dietrich and her daughter Charitas Bischoff. This is unfortunate, as she made such a significant advancement to our knowledge of North Queensland flora and fauna. I felt her scientific achievements made a far more interesting story than her involvement with her daughter (or lack of) or the effects this separation had on Charitas.

At times the science is also slightly incomplete. For example, I can add another species to the list of plants named after Dietrich i.e. *Persoonia amalieae* Domin. I feel sure there are more that have been missed, and no doubt there are more species named in her honour in the animal kingdom. Vernacular names are used in preference to scientific names, which makes reading easier but leaves room for ambiguity.

I finished the book feeling incredibly sorry for Dietrich. She suffered from poverty and personal hardships for most of her life. She left her husband after he had an affair with the domestic help. Dietrich took the Australian job in the first place so that she could give her daughter the education she never had, only to have her daughter reject her when she returned to Germany. In many ways Dietrich reminded me of Lawson's 'The Drover's Wife', in the way she persevered with the hostile environment and overcame the isolation and primitive conditions associated with colonial Australia. I feel Australia doesn't give her the credit she is due. After her death, Germany regarded her as a woman encompassing Nazi ideals, and later as a role model for a communist mother and as a feminist.

I think in Australia we should praise her for being an outstanding biologist. If you have encountered Amalie Dietrich's specimens and have always wondered why a German woman was collecting in an isolated part of

Australia during the last century, I recommend you read this book.

Peter Jobson, National Herbarium of Victoria
Royal Botanic Gardens, Melbourne

NOTICES

OBITUARY

Roy Pearce died suddenly on 5 August, 1995 aged 73 years. His name will not be known to many of you. He was one of those solid technical assistants on whom so many academics depend and who are rarely adequately acknowledged for the sterling service they give.

Roy was employed on the Waite Institute Farm Staff and later moved to the Agronomy Department. Later still he became my assistant in the ADW herbarium (now in AD).

It was he who poisoned and mounted hundreds of sheets and incorporated them. He dispatched hundreds of duplicates to K, MO, CANB and other herbaria. He drew maps and plotted distributions. His cytological field kit has travelled many a bumpy mile.

He aided student practicals and went on some student tours as well as making many useful herbarium collections.

At his funeral the Minister described him as "quietly committed". This is a good term for one who was capable, conscientious, careful and without whose support less would have been achieved. He had a good knowledge of the local flora and contributed Cannabaceae to the *Flora of Australia* and the Resedaceae to the *Flora of South Australia*.

David E. Symon

CHANGES AT DARWIN (DNA)

The Northern Territory Herbarium has been amalgamated with the Darwin Botanic Gardens - at least administratively! The Herbarium is still physically at Palmerston, some 20 km out of Darwin. However, approval has been given for eventual establishment of the Herbarium in the Gardens.

As a result of this amalgamation a new position of Chief Botanist was created and this has been filled by Greg Leach. The position is based in the Botanic Gardens. Clyde Dunlop and Ian Cowie are still in Palmerston. On discussing the new position Clyde Dunlop stated "might as well be in Canberra as have a job like that".

PHONE NUMBERS AT BRISBANE

Please note new telephone and fax numbers for BRI. These are shown inside the front cover (Gordon Guymer), under the Chapter Convenors and for the general herbaria numbers.

PLANT SYSTEMATICS RESEARCH IN AUSTRALASIA, 6TH EDITION 1996

The Council of Heads of Australian Herbaria (CHAH) is planning a new edition of Plant Systematics Research in Australasia. This will

be edited again by Dr CF Puttock and Ms KJ Cowley at the Australian National Herbarium, Centre for Plant Biodiversity Research. The scope will remain as defined in the previous edition: focusing on the flora of Australia and its territories. Contributions from research on the floras of Australia's neighbours are invited, but as in the previous edition, we do not anticipate these areas to be complete.

It is intended that by the end of September 1995 an electronically searchable version of the existing database of the fifth edition will be transferred onto the Internet, initially operating as a textfile. The structure of the database is being altered to enable those with Internet access the possibility of updating their entries electronically. The existing 1993 database will be made visible on the Internet in October 1995 at <http://www.anbg.gov.au/chah/psra/>.

Until the database is fully interactive on the Internet, and because of the large number of researchers currently without Internet access, it will be necessary to prepare for the next edition via a combination of electronic and hardcopy questionnaires. It is anticipated that the questionnaires for updating records and new entries will be sent out by the beginning of October and these should be returned by the end of November. If you do not receive a questionnaire by late October 1995 please contact Ms Cowley immediately.

Returned questionnaires and electronically mailed corrections will be transferred to the main database early in 1996. A hard copy of the database will then be published in a similar format to the previous edition. By mid-1996 the structure of the database should be completely revised and from then on it will be amended at regular intervals.

There are a limited number of copies of the fifth edition of Plant Systematics Research in Australasia still available. From October 1,

1995 these will be sold at a reduced rate of \$10 each.

CF Puttock & KJ Cowley
Australian National Herbarium
Centre for Plant Biodiversity Research
GPO Box 1600, Canberra 2601 ACT

Email: chrisp@pican.pi.csiro.au
Tel: (616) 246 5497 Fax: (616) 246 5249

RUBIACEAE LISTSERVER AND RUBIACEAE NEWSLETTER

An email listserver has been created as a forum for rapid communication for all those interested in Rubiaceae. It is hoped that this will become a vehicle for such things as notices of new publications, new taxa, conference and seminar announcements, and reports from conferences, requests for assistance, plant material, logistic arrangement for field trips, and the list goes on. And of course any discussion of anything to do with Rubiaceae is fair game and can be posted to the list. It is really up to the list members to make this forum work well.

The listserver is currently being tested and will be fully functional by the opening of 2nd International Rubiaceae Conference in Brussels (13-16 September 1995) and will be launched there. Linked to the server will be a Rubiaceae Newsletter and various other pages. Information for the newsletter can be sent first via the list for comment or directly to the listowner (chrisp@pi.csiro.au) before being placed into the Newsletter or associated Rubiaceae databases.

If you would like to subscribe to the Rubiaceae list, send the following email message to listserv@anbg.gov.au

subscribe rubiaceae-1 {your name}

for example if your name is Dr D.Coffee send the message:

subscribe rubiaceae-1 Dwyte Coffee

You will then get a message from the listprocessor which will confirm your joining the list. From then on you will then be able to send messages to the entire list, using the address rubiaceae-l@anbg.gov.au, which operates like a bulletin board, or reply directly to individuals on the list using their own email addresses. If you have any problems with sending messages to the list let me know at chrisp@pi.csiro.au

Comments and offers of assistance are invited and will be well received.

Christopher Puttock
Australian National Herbarium
GPO Box 1600 Canberra 2601 ACT Australia
Email: chrisp@pican.pi.csiro.au
Tel: (616) 246 5497 Fax: (616) 246 5249

THE RUBIACEAE NEWSLETTER

Although all messages sent to the list are archived, access is only available to subscribers. The Rubiaceae Newsletter is therefore designed to collect relevant information and present it on the WWW. This newsletter will be revised periodically, about quarterly intervals, and will then be distributed to those researchers that do not have access to the internet. Past 'issues' will also be archived.

Items that may be of general interest or significance to researchers should be sent to the Rubiaceae list or the chrisp@pi.csiro.au for inclusion in the Rubiaceae Newsletter. The framework of this WWW homepage is at present under construction and will be made visible shortly at <http://www.anbg.gov.au/projects/rubiaceae/>. When operational this WWW address will be posted to the Rubiaceae list and other taxonomy listservers on the Internet.

The associated WWW pages that are being prepared include:

- Rubiaceae publications.
- Generic and species lists.
- Lists of researchers by country.

These will be searchable databases.

Naturally the listserver and the newsletter and databases, will not work without contributions.

SOUTHERN CONNECTION

II CONGRESS

"Southern Temperate Biota and Ecosystems:
Past, Present and Future"

6-11 January 1997

The second Southern Connection conference will be held in southern Chile in January 1997. Already more than 160 people from 11 countries have sent in a preregistration form and this promises to be a major event.

Field trips will be held in conjunction with the conference and will cover some of the most important and picturesque vegetation in South America.

If you would like to receive more information about the conference, please contact:

Ignacio Fuenzalida
Local Organizer
II Southern Connection Congress
Depto. de Biología - Facultad de Ciencias
Universidad de Chile, Casilla 653
Santiago, Chile

Fax: 56 (2) 2712983
Email: Southern@abello.dic.uchile.cl
Botanica@abello.dic.uchile.cl

Please include your name, postal address, fax, telephone number and email address as appropriate.

SOUTHERN CONNECTION

Southern Connection was formed at a meeting in Hawaii early in 1991. The philosophy behind the group was to allow exchange of views and information among scientists with an interest in the biota of the southern hemisphere. All of you are aware of the problems caused by the distances between land masses, different languages, general problems with communication and more which beset the southern hemisphere. Southern Connection is helping to overcome these problems in a unique way.

Southern Connection is not a formal organisation and runs on good will. A newsletter appears twice yearly and conferences are also held. The first conference was in Hobart, Tasmania in January 1993, and the second conference will be in southern Chile in January 1997. If you become a member of Southern Connection, you will automatically receive the newsletter. There is no membership fee, but occasionally there is a call for donations to help with printing and postage costs for the newsletter.

Southern Connection has a membership of nearly 300, spread over 19 countries.

If you would like to be placed on the mailing list, please fill in the following form.

I would like to become a member of Southern Connection.

Name:

Postal address:

.....

.....

Telephone:

Fax:

Email address:

Please return to:

Prof. R.S. Hill
Department of Plant Science
University of Tasmania
GPO Box 252C
Hobart, Tasmania 7001
Australia

email: Bob.Hill@plant.utas.edu.au

ADVERTISEMENTS

ECOLOGY OF THE SOUTHERN CONIFERS: SPECIAL OFFER TO ASBS MEMBERS

Ecology of the Southern Conifers, edited by Neal Enright and Robert Hill, is the proceedings of a symposium at the ASBS conference held in Hobart in 1993. Twenty-eight scholars from across the hemisphere examine the history and ecology of the southern conifers, and emphasise their importance in understanding the evolution and ecological dynamics of southern vegetation.

Drawing together the results of research from ecosystems as varied as the South African fynbos and New Caledonian rainforests, the Argentinian steppe and inland Australia, this book searches for unifying themes and seeks to relate these to modern evolutionary and ecological theory.

Recommended retail price: \$79.95. Special offer to ASBS members: \$60.00 (plus \$12 p&p).

Send your cheques, made out to ASBS, to:

Katy Mallett,
ASBS Sales,
GPO Box 636,
Canberra, ACT 2601.

FREE COPIES OF ASBS NEWSLETTER BACK ISSUES! (YOU PAY POSTAGE ONLY)

Until the end of this year, ASBS Sales is having a grand clearance of excess copies of back issues of the ASBS newsletter. Here is your chance to complete your set. Copies available for most issues back to issue 32, up to issue 79, excluding issues 53 and 60 and including the index to volumes 51-70. Let your local library know.

Enquiries to:

Katy Mallett, ASBS Sales, GPO Box 636, Canberra, ACT 2601, or email:
kmallett.abrsabr@anca.erin.gov.au

A.S.B.S. PUBLICATIONS

History of Systematic Botany in Australia

Edited by P.S. Short. A4, case bound, 326pp. A.S.B.S., 1990.

Members \$30; non-members \$50. Postage \$10.

For all those people interested in the 1988 A.S.B.S. symposium in Melbourne, here are the proceedings. It is a very nicely presented volume, containing 36 papers on: the botanical exploration of our region; the role of horticulturalists, collectors and artists in the early documentation of the flora; the renowned (Mueller, Cunningham), and those whose contribution is sometimes overlooked (Buchanan, Wilhelmi).

Systematic Status of Large Flowering Plant Genera

A.S.B.S. Newsletter Number 53, edited by Helen Hewson. 1987. \$5 + \$1.10 postage.

This Newsletter issue includes the reports from the February 1986 Boden Conference on the "Systematic Status of Large Flowering Plant Genera". The reports cover: the genus concept; the role of cladistics in generic delimitation; geographic range and the genus concepts; the value of chemical characters, pollination syndromes, and breeding systems as generic determinants; and generic concepts in the Asteraceae, Chenopodiaceae, Epacridaceae, *Cassia*, *Acacia*, and *Eucalyptus*.

Evolution of the Flora and Fauna of Arid Australia

Edited by W.R. Barker & P.J.M. Greenslade. A.S.B.S. & A.N.Z.A.A.S., 1982. \$20 + \$5 postage.

This collection of more than 40 papers will interest all people concerned with Australia's dry inland, or the evolutionary history of its flora and fauna. It is of value to those studying both arid lands and evolution in general. Six sections cover: ecological and historical background; ecological and reproductive adaptations in plants; vertebrate animals; invertebrate animals; individual plant groups; and concluding remarks.

Australian Systematic Botany Society Newsletter

Back issues of the *Newsletter* are available from Number 27 (May 1981) onwards, excluding Numbers 29 and 31. Here is the chance to complete your set. Cover prices are \$3.50 (Numbers 27-59, excluding Number 53) and \$5.00 (Number 53, and 60 onwards). Postage \$1.10 per issue.

Also available are sweaters (\$25), t-shirts (\$15), mugs (\$8 each, or \$42 for a six-pack), and scarfs (\$20).

Send orders and remittances (payable to "A.S.B.S. Inc.") to:

Katy Mallett
A.S.B.S. Sales
Flora section, A.B.R.S.
G.P.O. Box 636
CANBERRA. A.C.T. 2601.
AUSTRALIA

A.S.B.S. INC. MEMBERSHIP APPLICATION

AUSTRALIAN SYSTEMATIC BOTANY SOCIETY INCORPORATED

(incorporated under the Associations Incorporation Act 1991)

APPLICATION FOR MEMBERSHIP

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hereby apply to become a member of the abovenamed incorporated association. In the event of my admission as a member, I agree to be bound by the rules of the Society for the time being in force.

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a member of the Society, nominate the applicant for membership of the Society.

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(signature of proposer)

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a member of the Society, second the nomination of the applicant for membership of the Society.

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Return this form, with the appropriate subscription, to the honorary treasurer:-

Dr P.G. Wilson

National Herbarium of New South Wales

Mrs Macquaries Road

SYDNEY, NSW. 2000

A.S.B.S. INC. MEMBERSHIP RENEWAL

AUSTRALIAN SYSTEMATIC BOTANY SOCIETY INCORPORATED
(incorporated under the Associations Incorporation Act 1991)



SUBSCRIPTION FORM

Subscriptions for A.S.B.S. membership for 1995 are due on 1 January, 1995. If you have already paid your subscriptions for 1995, please ignore this *pro forma* notice. The *Australian Systematic Botany Newsletter* will not be sent to unfinancial members. Correspondence concerning membership and subscriptions should be sent to the Treasurer at the address below.

Subscriptions for 1995, including the *A.S.B.S. Newsletter*, are:

Ordinary/Institutional \$35.00
Full-time Student \$15.00

In addition, your contribution to the HJ. Eichler Research Fund would be most welcome. Please return the form below with your 1995 subscription, plus any arrears, voluntary contributions to the Research Fund or payment for CSIRO journal subscriptions, with any address corrections, to the Treasurer at the address shown below. Your cheque should be made payable in Australian dollars to: Australian Systematic Botany Society Inc.

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Royal Botanic Gardens
Sydney NSW 2000 Australia.

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This list will be kept up to date, and will be published in each issue.
Please inform us of any changes or additions.

The Society

The Australian Systematic Botany Society is an incorporated association of over 300 people with professional or amateur interest in botany. The aim of the Society is to promote the study of plant systematics.

Membership

Membership is open to all those interested in plant systematics. Membership entitles the member to attend general meetings and chapter meetings, and to receive the *Newsletter*. Any person may apply for membership by filling in an "Membership Application" form and forwarding it, with the appropriate subscription, to the treasurer. Subscriptions become due on January 1 each year.

The Newsletter

The *Newsletter* appears quarterly, keeps members informed of Society events and news, and provides a vehicle for debate and discussion. In addition, original articles, notes and letters (not exceeding ten published pages in length) will be considered.

Contributions should be sent to one of the editors at the address given below. They should preferably be submitted as:- an unformatted word-processor or ASCII file on an MS-DOS or Macintosh diskette, accompanied by a printed copy; as an unformatted word-processor or ASCII email file, accompanied by a fax message reporting the sending of the file; or as two typed copies with double-spacing if less than one page.

The deadline for contributions is the last day of February, May, August, and November.

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